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Melrose, Susan (2015) Chasing expertise: reappraising the role of intuitive process in creative decisionmaking. In: Thinking Dance 2015: Questioning the Contemporary Symposium,, 16-17 Oct 2015, Leeds Beckett University, Leeds, United Kingdom. . [Conference or Workshop Item]

Final accepted version (with author's formatting)

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Susan Melrose

Chasing *expertise*: reappraising the role of intuitive process in creative decision-making

ABSTRACT

What are some of the implications for the ways we think about contemporary dance-making, today, if we start from the premise that while art-making is *a mode of work*, *expertise* in that mode of work is rarely thematised in Dance writing - even though that expertise is widely celebrated in the world or worlds of dance and performance?

I asked in the early days of the 21stC why terms like “performance mastery”, “virtuosity” and “disciplinary expertise” figured so rarely in performance and dance studies writing, even though each of these plays its role in judgements made every day in the working environments as well as the performance spaces of dance/performance. Today I want to talk about the vital role of *intuitive process* in creative decision-making in performance, a role that tends to increase (rather than diminish) as the practitioner’s own expertise increases. Intuitive process, from this perspective, is a vital *knowledge practice* (epistemics) in art-making, rather than the poor and frivolous cousin of rational and analytic thought.

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intuitive (adj.)

1640s, from Middle French *intuitif* or directly from Medieval Latin *intuitivus*, from *intuit-*, past participle stem of *intueri* "look at, consider" (see intuition). Related: Intuitively; intuitiveness.

Introduction: running in (epistemic) circles

I have deliberately set up a research conundrum when I proposed, in my Abstract, that "intuitive process is a vital *knowledge practice* (epistemics) in art-making". That research conundrum, or "logical postulation that evades resolution" remains such because while I can make claims about the nature of the role of the intuitive in creative performance decision-making, I can't provide the sort of proof for those claims that meets the basic criteria for evaluating research. Instead, I have a long-established *feeling* that the expert-intuitive is a type of knowledge in practice, amongst others, that is vital to creative decision-making in performance and to wider understanding of this. Having a feeling, however, even if it is a strong and reasonably well-informed one, does not help my research case, because what it suggests, in terms of the research conundrum to which I referred a few moments ago, is that I actually *intuit* the importance of the *intuitive* in a particular field of expert practice. For some philosophers, for whom the status of intuition in philosophy has never been an easy matter, what I am engaged in here is called "epistemic circularity": I am effectively claiming to know something *via intuition*, "about intuition", which I am describing as vital to making expert or professional decisions in a performance-making context. For many researchers in many disciplinary fields, this claim would be characterised as unreliable, at best, needing what is called "Independent calibration". But where might we find "independent calibration"?

Does this research difficulty matter to research in the creative arts? Perhaps it doesn't if the "knowledge problem" I have identified is limited both to my own peculiar research interests and to those of the research-methodologists who legislate on the status of certain sorts of knowledge, in certain limited contexts. But my argument is that there is a particular need, whenever we try to focus on decision-making processes in the performing arts, to be quite clear as to the importance of an ongoing enquiry into the ways creative decisions are taken

by expert practitioners, for all kinds of reasons. They include that issue of epistemic circularity, since it applies more widely, to some of my student-practitioner-researchers' own engagements with complex knowledge practices and to those of some of my colleagues. As for me, my enquiry has been described as dogged, but I continue to be fascinated by expert knowledge practices that seem to have been widely neglected or omitted from enquiry across the disciplines especially in the second half of the 20thC.

21st Century changes to research

Happily, in spite of the very strong doubts of certain schools of philosophy, and of scholars in certain other research areas, research into intuitive processes has burgeoned over the first decade of the 21stC, in the fields of Psychology, Education, Professional Practice, Information Processing and Artificial Intelligence, and I want to try today to look at some limited aspects of some of that research. It has burgeoned in the face of at least half a century of widespread neglect. Tony Bastick, one of the key writers on the importance of the intuitive from an educational perspective, has emphasised in his 2003 workⁱ the extent to which the intuitive and insight have been omitted from or trivialised in 20thC approaches to knowledge in general and to expertise in particular: he reports on a 1978 computer-aided study made of published articles from a number of fields of human knowledge. Researchers looked for the noun "intuition" in 592,000 US doctoral theses, 276,000 articles from Psychology, 50,000 articles from Information Services and mechanical engineering, 1,470,000 articles from Biology and bio-research - and so on.

Of the total tally of 2,692,000 articles and theses published up to 1978, his researchers found only 91 uses of the noun "intuition"; of these only 24 were found in studies of intuition itself; the remaining 67, he writes, used the noun "in a casual [or everyday] sense", which tended to trivialise the term and what it was taken to stand for (Bastick 2003 p.7). Here then is independently-obtained evidence, not attesting to the importance of intuitive processes in the development of expertise but on the contrary: it confirms the extensive and some may say systematic omission of enquiry into intuition or intuitive processes.

Experimental Philosophy

To come back for a moment to the “intuitive” problem for Western Philosophy, I was cheered at least to discover that a new field of philosophy has been developing over the past decade called Experimental Philosophy. Two professional philosophers- Joel Pust and Edward N. Zalta - noted in 2014 that “In the last decade or so, there has been an explosion of interest in research involving the scientific or empirical investigation of intuitions of philosophical interest. Such projects are now frequently grouped under the rubric of ‘Experimental Philosophy’.” They note that there are four projects afoot in experimental philosophy’s engagement with intuition. The first project, “*the psychology project*”, they write, “aims to discover how people ordinarily think”. (I wish them luck.) “The second project, ‘*the verification project*’, aims to determine if the various propositions which philosophers allege to be intuitive, pre-theoretical or “part of common sense” are, in fact, *intuitive* to ordinary non-philosophers”. The third project, “*the sources project*,” aims to discover the psychological mechanisms or processes that produce peoples’ intuitions”. The fourth Project, called “*the variation project*,” seeks to determine the extent of variation in intuitions between different groups, persons or persons-at-times or persons-in-contexts”.

I am not sure that I am interested in the so-called “psychology project” and its aims to discover how people ordinarily think, for the simple reason that my concern here is how expert or professional practitioners make creative decisions in practice, with a creative outcome in view. As to the “verification project”, as what is called a ‘non-philosopher’, I am keenly interested in and sympathise with some of the early 20thC French philosopher Henri’s Bergson’s observations about the creative and about duration, but the verification problematic seems to me to remain in place – his writing may inspire, but its observations are extremely difficult to test in research terms. As to the “sources project’s ‘aims to discover what produces people’s intuitions’”, once again, I wish them luck. What seems to me to be of more interest here is the matter of the extent of variation “in intuitions between different groups, persons, persons-at-times or person’s in contexts”.

I would like you all to think about the issue of variation *between* intuitive processes amongst experts in a similar field or fields, when I shortly show you an extract from a professionally-made film recording expert performance makers caught up in what I take to be a highly

dramatic creative decision-making process, with financial constraints starting to tell on the whole team. The work you will see is professional, expert and it is “always experimental”, for reasons I will return to.

Before I show you the film clip, you should probably be aware of the sorts of caveats that the “experimental philosophers” have set out with regard to experiments themselves into intuitive processes: the filmed extract that follows is not a hypothetical case, which the experimental philosophers propose to work with, but rather a “real”, historically and contextually-specific event, professionally filmed and no doubt cunningly edited, professional and expert in nature as far as all of the practitioners at work are concerned. It shows a working situation where creative decisions in performance must be made, if the collective is to meet a long-planned deadline. Nonetheless, the brief enquiry I am proposing here, in research terms, is likely to use what the experimental philosophers call “traditional first-person armchair methods”, which in my view even skilled and experienced “expert spectators” – like myself – are likely to draw on. Those same philosophers also warn us that researchers into intuition need to acknowledge that certain “features of the content of the scenario under consideration [will seem to] vary” less on the basis of our expertise but on the basis of our own *individual* intuitions. Those individual responses, Bastick’s research would seem to me to show, may well involve and prioritise our “everyday intuitions”, rather than the expert, for the simple reason that the dearth of research into the intuitive, in the later 20thC, means that few of us have recourse to a formal research discourse relating to it.

In other words, even though we might characterise ourselves here as professionals or expert-practitioners in a fairly limited range of fields, it seems that we are likely to disagree as to what we are watching, what we see there, and the sorts of conclusions we might want to draw. As I indicate above, these caveats appear to be necessary in research terms precisely because of the nature of intuition – which tends to engage us in the first person - the lack of formal study of the same, and the limited extent to which the intuitive has been thematised in the expert discourses with which many of us operate.

The extract is professional theatre-making rather than dance, if we want to retain knowledge categories that some might say belong to the last century. It is “French theatre”,

dating from the mid-1990s, around the time when so-called “physical theatre” was making its mark. Unusually enough for the *Théâtre du Soleil* at that time, it uses the dramatic writing of the 17th C French dramatist Molière (1622-1673). The director is Ariane Mnouchkine and the company is a collective. With these few words I should already have set up for you a number at least of expectations; I may have already been able to arouse in some of you what tend to be implicit attitudes and ways of seeing and knowing (or “models of intelligibility”) that differ across this present group of “practitioner-researchers”. In terms of the “variation project” of the Experimental Philosophers, then, their concern with “different groups, persons, persons-at-times or person’s in contexts”, and the intuitions of the same, it would seem to me that what I am about to show you might well expose differences between us with regard to the sympathies, recall, recognition, sense of immersed or outsider understandings, as well as the expert knowledge you bring to this admittedly very brief scenario. If this were qualitative research, I might proceed to ask each of you a number of questions, starting with these: 1 what do you *intuit* as to what is going on, in this “expert scenario”? 2 what do you *intuit* as to the role of expert-intuitive decision-making, in the same? And 3, to what extent and on what bases would you qualify your own intuitions as expert?

From *Au Soleil même la nuit*, © Agat Film & Cie, Théâtre du Soleil, La Sept ARTE, 1997. The filmed account of the processes involved in making the production of Molière’s *Le Tartuffe*, by the *Théâtre du Soleil*, Paris, directed by Ariane Mnouchkine (1996).

Expertise and variation

I mentioned earlier the burgeoning research interest in the intuitive and indeed its role in the development of expertise over recent years, especially in fields like Professional Development, Business Leadership and Artificial Intelligence, but I have also signalled my own anxieties as to the ready transfer of the sorts of findings emerging from those fields, to the field or fields of creative decision-making in the arts. Some of the research is no doubt fascinating, like the article entitled "Estimating return on leadership development

investment" (PDF), from *The Leadership Quarterly* 21 (4): 633–644), written by B.J. Avolio, J.B. Avey, & D. Quisenberry, (August 2010), or A. Price's "Encouraging reflection and critical thinking in practice" from the *Nursing Standard* 18 (47): 46–52 (2004). My *feeling* as to the pertinency of their findings to the field of expertise in creative decision-making by expert practitioners in the arts is that fields like nursing and coaching in business leadership are likely to be governed by judgements of value focused on "best practice" within the framework of "professional excellence". "Best practice" is a goal ratified by the wider institution/s involved. But if I am right that many practitioners in the creative arts are driven by something called a *creative imperative*, by the quest for *singularity*, by the desire for *qualitative transformation*, as Brian Massumi has called it, or by the development of *aesthetic signature* and *signature practices*, then it seems to me that it is unlikely that "best practice" provides us with a convincing model for a study of expert creative decision-making to follow.

On the other hand, there is relatively little published research on intuitive process and the development of expertise, or mastery, or virtuosity in the performing arts. What published research there is with what seems to me to be some implication for the performing arts tends to appear in the fields of Education or Psychology. Indicatively, the article "A spiral model of musical decision-making", by D. Bangert, E. Schubert, and D. Fabian was published in *Frontiers in Psychology* (2014; 5: 320); the paper from Education, "The role of intuition and deliberative thinking in experts' superior tactical decision-making" (J.H. Moxley, K. Anders Ericsson, N. Charness and R.T. Krampe, was published in the journal *Cognition* 124 (2012) 72–78), and "How Intuition contributes to high performance: An educational perspective" by C. Hartels, T. Koch and B.Morgenthaler, appeared in the *US-China Education Review* (Jan. 2008, Volume 5, No.1). In each of these articles, to which I propose to return shortly, I sense a degree of "empirical fit" between their approach and what I am talking about today. But once again, are the notions of "sensing" and "empirical fit" legitimate in terms of our own research?

Meanwhile, as many of you here are likely to be aware, one of the most developed early European references to the intuitive can be found in the late 19thC-early 20thC writing of the French mathematician and philosopher Henri Bergson (1859-1941) for whom "intuition"

(the noun) constitutes a method – in philosophy, at least. If you are not familiar with Bergson's *Matter and Memory* (first published in 1896 and published in English translation in 1994) or the *Creative Mind*, first published in 1907 and in English translation in 1946)ⁱⁱ, I want simply to begin by observing that the “intuitive”, for Bergson, as a number of commentators have pointed out, can be understood variously in terms of “memory”, of “sympathy” or “self-sympathy”, and as “experience”, to which we can add the two notions of recognition and of what Bergson called “unconscious memory” (which he pointed out was not the Freudian sense of the term). “Memory” in Bergson, often given as “intuition itself”, is in his words the “continuity of the inner life and consequently its indivisibility” – an aspect that I think signals some of our difficulties if we continue to want to try to analyse the practices of intuition according to a psychologising, textualist or intertextual or a structuralist model. Besides, the intuitive from this bergsonian perspective asks for a “reversal of habitual intelligence” where that habitual intelligence was primarily characterised by analysis, or dissolving or breaking a phenomenon apart into apparently constituent elements. I would observe at this point that “memory”, is likely to be understood as a largely individualised, subjective experience, although some of us may share what might be described as “cultural memory” linked to cultural context and time. “Sympathy” and “self-sympathy”, at least in the context of individual and shared experience, may well straddle a subjective-objective continuum, making these notions similarly “indivisible” and particularly difficult to theorise. Individual and cultural “recognition”, meanwhile, seem to me to signal an experience that is *sensed* in the first instance, and available to be deliberated upon in the time that follows.

Philosophical “Intuition”, in Bergson, was given as “a kind of experience”, entailing both *recognition* and *judgement* (the latter being particularly resistant to analysis but constantly exercised in the everyday of expert practices). I want to borrow some of the terms from his philosophical method, if not the early 20thC ontologising aspirationⁱⁱⁱ I find there, arguing that on the basis of the filmed rehearsal processes I showed you a few minutes ago, the director's experience (and that of her long-term colleagues) emerges out of a constantly renewed professionally-driven experimentation, with regard to which she first *tests out* intuitive decision-making processes, while following those up with what are called deliberative expert decision-making processes.

I should emphasise the words “she tests out” the intuitive processes, precisely because the work of *making* to published deadlines is always experimental. I will come back to the deliberative. Each of the old and newer members of the collective has a professionally-ratified, different experience and expertise in performance-making. The film goes on from the clip you have seen to show the director interrogating herself (as to the reasons for her radical and apparently frustrated intervention). In my own interpretation that experience is acute in terms of the affects, of affectivity, and it is experienced, differently in each instance, in first person terms – that is, subjectively – and in terms of affective intensity; it is also experienced in public, as we see exemplified in figs 3 and 4 below, and on that basis I would once again evoke the objective-subjective continuum. As such it is likely to have contributed to the development of creative expertise in each participant, via a constantly-renewed and critical feedback loop.

The type of self-awareness, self-review and self-critique, hinted at in the shot that follows



Fig 1: Martial Jacques in very dramatic rehearsals for *Tartuffe*.

and in the shot of Mnouchkine (below, fig 2) is likely to contribute to an ongoing expert development that undoubtedly continues today in these expert practitioners. But I have intuited some of my observations here. What we have seen in the clip is far, I must admit, from conventional “best practice”, yet it would appear to have been necessary. That expertise is tested in terms of the development of what is called *meta-agency* – an expert consciousness of self and other *as practitioners*, having, to a lesser or greater degree, creative agency - that is likely to be experienced by the practitioner as implicit, until, as is the case here, it is publicly thematised as such. It should involve, in my view, a grasping of and an ability to thematise what others have called the *technicity of self and other as practitioners*, as well as the range of modes and models of practice, that we might expect to find in expertise.

Curious connections

I want to point out at this stage something I have briefly mentioned elsewhere^{iv} which is the curious morphological link between the terms “experiment”, “experience”, and “expertise”.

Experiment (n) mid-14c., "action of observing or testing; an observation, test, or trial;" also "piece of evidence or empirical proof; feat of magic or sorcery," from Old French *esperment* "practical knowledge, cunning; enchantment, magic spell; trial, proof, example; lesson, sign, indication," from Latin *experimentum* "a trial, test, proof, experiment," noun of action from *experiri* "to test, try" (see [experience\(n.\)](#)).

Experiment (v) late 15c., from *experiment (n.)*. Intransitive sense by 1787. Related: Experimented; experimenting.

Experience (n) late 14c., "observation as the source of knowledge; actual observation; an event which has affected one," from Old French *esperience* "experiment, proof, experience" (13c.), from Latin *experientia* "a trial, proof, experiment; knowledge gained by repeated trials," from *experientem* (nominative *experiens*) "experienced, enterprising, active, industrious," present participle of *experiri* "to try, test," from *ex-* "out of" (see [ex-](#)) + *peritus* "experienced, tested," from PIE root **per-* (3) "to lead, pass over" (see [peril](#)). Meaning "state of having done something and gotten handy at it" is from late 15c.

Experience (v) 1530s, "to test, try, learn by practical trial or proof.-" Sense of 'feel, undergo' first recorded 1580s. Related: [Experienced](#); experiences; experiencing.

Expert (adj)late 14c., "having had experience; skillful," from Old French *expert*, *espert* "experienced, practiced, skilled" and directly from Latin *expertus* (contracted from **experitus*), "tried, proved, known by experience," past participle of *experiri* "to try, test" (see [experience](#)). The adjective tends to be accented on the second syllable, the noun on the first. Related: *Expertly*; *expertness*.

Expert (n) early 15c., "person wise through experience," from *expert* (adj.). The word reappeared 1825 in the legal sense, "person who, by virtue of special acquired knowledge or experience on a subject, presumably not within the knowledge of men generally, may testify in a court of justice to matters of opinion thereon, as distinguished from ordinary witnesses, who can in general testify only to facts" [Century Dictionary].

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Two of these terms, experiment and experience, a brief etymological enquiry shows us, emerged into the Middle English “knowledge economy” of the time, between 1325 and 1400 AD. So too did the noun and qualifier “expert”, and from the same Latin source, whereas “expertise”, curiously enough, came from the French, and was not formally recognised until the 17thC in England. It may seem unsurprising to some of you that “experiment”, as an “action of observing or testing; an observation, test, or trial” was tightly linked, etymologically, to “experience” and to “expert”, where “expert” is given to mean “(having had) experience”, and signals a “person wise through experience”. That wisdom seems to me to be curiously weighted: it is likely to quite specific when it comes to the nature of the field/s involved, yet we may well attribute it more generally to the expert practitioners involved. Few of us would hesitate when it comes to acknowledging the wisdom of theatre-makers, Peter Brook and Robert Wilson, musician Yehudi Menuhin, or choreographer and visual artists, Rosemary Butcher and Shobana Jeyasingh, but while we attribute wisdom to them in the everyday, few of us are actually likely to have seen their expert-intuitive processes at work *in the making* (in the rehearsal or devising workshop). Few of us, in addition, are able to identify exactly what constitutes that peak of *expert* knowledge. Meanwhile, few philosophers, as I have suggested above, seem to have concerned themselves with the notion of expertise, which in the examples I have cited is likely to have contributed to the development of wisdom - although the notion of *craftsmanship* did indeed figure in the Aristotelian engagement with *epistêmê* and *technê*^v.

I might suggest that experimentation, experience, and expertise are tightly connected in the professional development of expert practitioners, but what that in turn suggests is that we should be able to account for the ways experiment and experience contribute. Specifically, “human experience” of expert practices themselves, if we review this notion in the context of Bergson’s avowedly “useful” account of the intuitive, can be seen as one component in the development of expertise in general, but in the Performing Arts, that experience grows out of a spirit of continuing experimentation and critical reflection, such as we see in the case of Mnouchkine (Fig 2 below), following the event of her intervention in the rehearsal process.



Fig 2: Ariane Mnouchkine reflects critically on her earlier intervention in rehearsals for *Le Tartuffe*.

In this example it would appear that sustained experimentation and critical reflection lead to the development of “mature intuition”, and of “intuitive expertise”, in creative decision-making, and that the acquisition of that expertise is likely to be painful or challenging of “habitual intelligence”^{vi}. The fact that some expert arts-practitioners prefer not to acknowledge their expertise as such does nothing to undermine the evidence emerging from their creative outcome. Each of the “wise” practitioners I have cited works with highly detailed precision and understanding of what I have called the “logic/s of production”^{vii}, in both aesthetic and professional terms. In what follows I seek to identify what “knowledge objects” some of the intuitive decision-making involved consists of, while acknowledging that the observations made by some key researchers derive from empirical research and are necessarily descriptive rather than analytical.

“Fast and frugal” or rich intuitive knowledge

In their paper entitled “How intuition contributes to high performance: an educational perspective”^{viii}, the writers identify a particular aim which is to explore the role intuitive expertise plays in *judgement* in the professional and educational spheres. While they

recognise that others have identified “two parallel and permanent thinking systems” – the intuitive and the deliberative – at play in expert decision-making, the-researchers argue that “intuition utilizes tacit knowledge and is not dependent on awareness and concentration”. It is not dependent upon deliberation, which may however follow. The phenomenon of [intuitive] insight arises suddenly, they argue, quoting Bastick (2003). This is especially so, for Bastick, “in cases of longer, deliberate and unsuccessful thinking about a problem”. It often arises suddenly “after a period of incubation and rumination when thinking activities have been [interrupted]”.

They report on a debate in ways of understanding intuition that opposes two models which seem to me to have interesting implications for the ways we might think about the role of the intuitive in developing expertise in creative practice – if, of course, we can overcome our own long-established and often negative interpretations of intuition. On the one side is the characterisation of intuition as “fast and frugal”, meaning that it seems to happen spontaneously but to be relatively brief and slight in terms of its implications. The writers suggest, with regard to the notion of a frugal intuitivity, that in fact intuitive decision-making is fast because it is informed by “an abbreviation of the cognitive pattern” acquired through prior experience (and, in my version, experimentation and critical self-reflection). On the other side is the role of implicit knowledge in expert decision-making. Here they look at the notion (from Groot 1986) that experts operating intuitively recognize patterns in complex arrangements which enable them to respond spontaneously: this constitutes the idea of intuition as recognition, which we also find in Bergson. It allows experts to seem to avoid concentration, reflection or awareness. But this model differs from the notion of a “fast and frugal” intuitive decision-making, because in the recognition model, the intuitive engages with what is called “rich knowledge”. Such “rich knowledge”, in a professional as well as a training context, will be complex and marked by the specificities of that context and its set-ups, but perhaps we can identify certain aspects from within that or those contexts, and plainly trainers and teachers will have attempted to do so. Expert practitioners are no longer consciously aware of this rich knowledge as such, because they have internalised rich or complex knowledge practices acquired in the professional environment, through ongoing experimentation, experience (including recognition and judgement) and progressive enculturation.

It seems to me from this perspective that is derived largely from empirical studies of professional actions at work, and the ways these are discussed by those professionals, that expertise in practitioners develops from non-formal learning and tacit knowledge acquired in the working environment itself. The developed structures of what is called “explicable knowledge” – this is knowledge that is declarative and procedural – are seen as describing only one aspect of professional decision-making. The intuitive here is seen not only as recognition of patterns but also as “rapid responses to developing situations...based on the tacit application of tacit rules” that apply in a particular area of professional practice. This rich intuitive processing is fast but it is also bound up in judgements made. Practitioners work to something like a “condensat[ion] of complex knowledge patterns”, developed through implicit learning during the processes of enculturation in a particular working environment.

What is learnt in this way is knowledge *as a set of practices that mediate implicit and other knowledge* in quite specific set-ups and contexts (these latter notions operating in terms of the Experimental Philosophers’ variation project). If we think back to the Ariane Mnouchkine/Martial Jacques situation at the *Théâtre du Soleil*, we can I think see attempts at what is understood by the researchers to be the “professional capacities to decide appropriately under constraint”: they note that “if a ...result is positive, a mental model develops that can guide future fast decisions”. The researchers also note however that “feelings of stress or anger are the biggest obstacles to intuitive decision-making” (Figs 1 and 2, above). Perhaps I should add here that experimentation itself does not lead to experience and professional expertise. What is missing are two factors: effective implementation, in expert or professional terms, and feedback, whether the feedback, the researchers observe, is “self-created by reflection or given by others in a social setting” (see indicatively Figs 3 and 4, below).

Once again, I sense the interest of these research findings in Education, from a wide range of different sources, to the case at hand, but perhaps I need to ring the research-methodological bell again, and remind myself of the experimental philosophers’ “variation project” cited above: does it matter to my project that some of the quantitative research undertaken by researchers quoted here took a group of chicken-sexers as one of the

professional groups whose decision-making was tested? I do keep wondering as well whether quantitative research in the creative decision-making context in the arts might not be stymied by the difficulty of gathering a group, say, of professional choreographers in a room, prior to asking them about their own intuitive and deliberative work strategies and tactics.

The intuitive and the deliberative

In “A spiral model of musical decision-making”^{ix} the authors discuss the differences between intuitive and deliberative decision-making processes in the development of performance mastery in Music training with an instrument. They identify the intuitive as “fast, high capacity, independent of [the degree of] working memory and cognitive ability” and the deliberative as “slow, low capacity, heavily dependent on working memory and related to individual differences in cognitive ability”. They quote an empirical study that has found that professional music performers “have a tendency to prefer versatile or intuitive/serialist styles of learning”, to deliberative modes. They wonder whether interaction between the intuitive and the deliberative might change proportionally as performers develop greater experience of the instrument, noting that a practitioner’s decision-making processes change over time and with increasing expertise. Both intuitive and deliberate processes can be employed, but expert intuition occurs *before* deliberation – and I would add that the first may seem to suffice in the immediacy of expert practice; finally, the nature and content of intuitions can change, as future intuitions tend to be informed by the development of analytical thinking.

In their paper entitled “The role of intuition and deliberative thinking in experts’ superior tactical decision-making”^x, the writers similarly focus on empirical studies, but with a particular interest on the importance of deliberative processes that follow upon rapid intuitive processing. They attempt “to measure the objective value of [intuitively-based] actions preferred at the start [of decision-making] versus the [deliberative utilised at the] conclusion of decision making”. Their research, they write, “finds that both experts and less skilled individuals benefit significantly from extra deliberation regardless of whether the problem is easy or difficult”. The writers cite a number of later 20thC researchers (for Bastick these are no doubt post-1978 researchers!) including Dreyfus and Dreyfus^{xi}, whose

research in the late 1980s suggested that that experts' decisions are "primarily the result of accumulation of extended experience, leading to fast intuitive decisions". Plainly research from the late 1980s responded in part to what I have identified, above, as the widespread and systematic omission of intuition from research across the human sciences, but this later paper, published in 2014, seems to me to imply that the late 20thC enthusiasm for the intuitive might in turn have neglected the importance of slower deliberation in decision-making. The deliberations of Ariane Mnouchkine (Fig 2 above) that follow upon her dramatic intervention in the clip you have viewed, seem to me to reinforce the argument as to their important role in the ongoing development of expertise. On the other hand, the empirical studies cited come from the domains of "athletics, typing, and music"^{xii}, suggesting once again that we might need to ponder the issue of research knowledge transfer between disciplinary fields.

The writers note, from their educational perspective, that in such domains "where we see reproducibly superior performance, expertise is not associated with length of experience but with the duration of training activities (deliberate practice) that give immediate accurate feedback and opportunities for gradual improvement". Is Martial Jacques, in the clip you have viewed, caught up in "training activities"? Certainly some of his colleagues, in further footage from the same film, argue that he is being schooled to perform under Mnouchkine's signature, rather than allowed to practise his (already established) artistry. Equally, as we see from the work of J-F Lyotard^{xiii}, to which I turn briefly below, Martial Jacques' "inhibited reaction" (see Fig 1 above) in the rehearsal period shown, may be seen to signal an inability to respond intuitively in the immediate context, but that delay may well point to a slower, deliberative engagement on his part, whose outcome will emerge in later rehearsal processes. The writers reinforce the argument as to the importance, to the development of expertise, of pattern recognition, and on the basis of their findings with regard to the deliberative, we might well acknowledge, once again, the importance of the feedback loop (mixing internal and external responses) to the expert practitioner's deliberations.

I do keep tripping over links that I find between Henri Bergson's 1907 work *The Creative Mind* and this recent research writing, pondering, once again, my *sense* that something vital

is missing from the developing research enquiry into professional practice in the sorts of contexts I have been investigating. I noted earlier that Bergson described the intuitive as “sympathy”, where sympathy “consists in putting ourselves in the place of others”. It “consists in entering into the thing, rather than going around it from the outside”. Similarly, “we seize ourselves from within – but this self-sympathy develops heterogeneously into [sympathy for] others” (see fig 3, below).



Fig 3: collective members as expert audience in preparations at the *Theatre du Soleil*

In Deleuze’s reading and rewriting of Bergson’s work, under the heading of *Le Bergsonisme*^{xiv} (1966), he notes something I find useful in terms of the question of the development of meta-agency in the acquisition of expertise that I mentioned earlier: “Intuition leads us to go beyond the state of experience toward the conditions of experience” (p 27), he writes. What might constitute the “conditions of experience” specific to expert performance-making in the constitutively experimental environment of the *Theatre du Soleil* collective, in Paris in the mid-1990s? Plainly they are “theatrical” but they are also performer-inter-relational and locate themselves in the contemporary. According to J-F. Lyotard^{xv}, also referencing Bergson on intuitive processes and memory,

remembering, in the context of the acquisition of expertise, “also entails the engagement”, in the practitioner, “of a *meta-practice*” (my emphasis), which transcends the immediate situation of experience and recall. It is mastery of the developing meta-practice that signals the development of expertise: hence “[t]here is not only ...delay”, for the learning practitioner, “in [her or his] reaction to [present] stimulus” (see Martial Jacques, fig 1 above). There is “not only the suspension and reserv[ation] of this reaction as potential (i.e. habit), but the grasp[ing] of this inhibited reaction, even when it is not called up by the present situation” (51).

Hence we learn from experience and store that learning regardless of the fact of acting it out or not at the time. Such a process, Lyotard argues, “implies...the intervention of a [growing] meta-agency [in the maker] which inscribes on itself, conserves and makes available the action-reaction pair independently of the present time and place”.

In this approach to learning, expert practice “is *itself immediately grasped as technique*, and a technique of a higher rank, a *meta-technique*” (my emphases). Practice-memory, such as I would attribute to the key practitioners in the video clip you have seen today, “implies [the acquisition] of properties unknown to habit” – requiring ongoing experimentation - and the “recursivity...and self-reference...” (52) that permits deliberation, self-critical reflection, the future thematisation of technique as such, and the rearticulation of what is retained.

The case for the affective in expert practices: to conclude

I want to end by noting something else that Lyotard and Deleuze allow me to add, through their work on Bergson’s intuition, to the instances of research in professional learning that I have begun to discuss. It is something that seems to me to have been largely missing from the recent texts I have cited: that is, affect^{xvi}, affectivity in expert creative decision-making. In concluding his text *Bergsonism*, Deleuze asks, with regard to Bergson’s work on intuition, “what is it that appears in the interval between [human] intelligence and society...?”

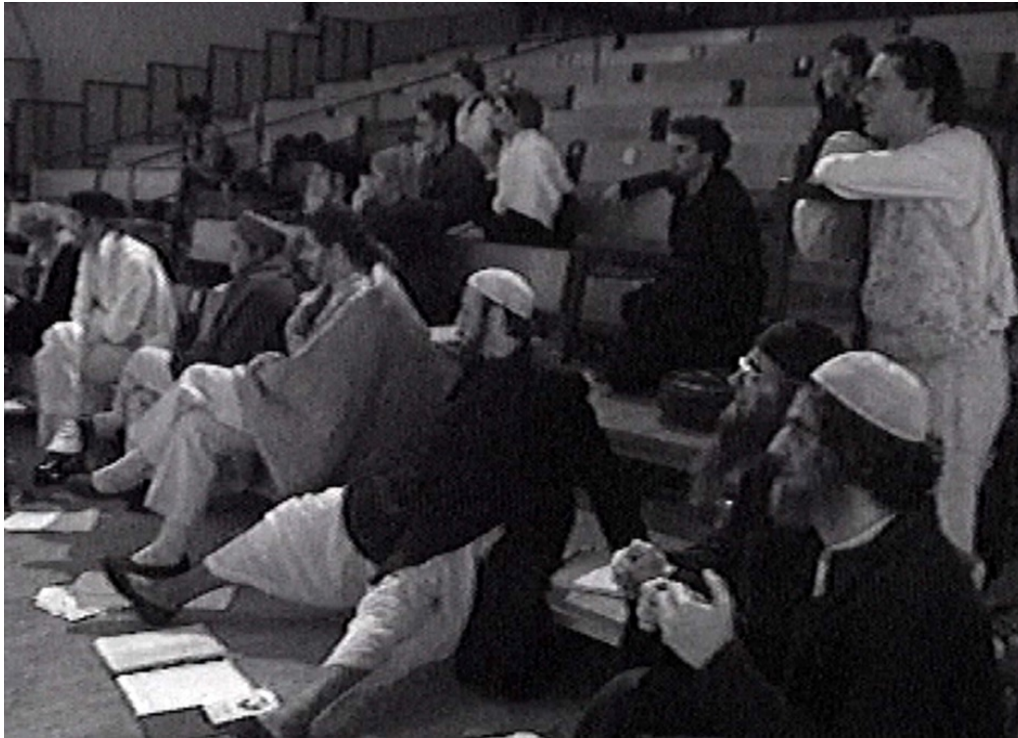


Fig 4: the collective as an expert social group

It is here, in the interval between human intelligence and society, that the intuitive plays such an important role. Deleuze's response to his own question is this: "[w]e cannot [simply] reply [that the interval between human intelligence and society...] is intuition. In fact we must on the contrary carry out a *genesis of intuition*, that is, we must determine the way in which intelligence itself was converted or is converted into intuition....".

"Bergson's real answer", Deleuze concludes, "...is [that w]hat appears in the interval is *emotion*". The little interval that insinuates itself "between the pressure of society and the resistance of intelligence", defines "a variability appropriate to human societies".

[B]y means of this interval", he writes, "something extraordinary is produced or embodied: [it is] creative emotion." "It is the genesis of intuition in intelligence" (111), he adds, that we find in the interval that opens up, in certain situations, between human intelligence and society.

Endnotes

ⁱ T. Bastick, *Intuition: Evaluating the Construct and its impact on Creative Thinking*, Kingston, Jamaica: Stoneman & Lang, 2003.

ⁱⁱ H. Bergson, Bergson, H.; *Matter and Memory* 1911, (*Matière et mémoire* 1896) Zone Books 1990; *The Creative Mind: An Introduction to Metaphysics* 1946. (*La Pensée et le mouvant* 1934) Citadel Press 2002.

ⁱⁱⁱ Published writing which uses the verb “to be” without qualification is “ontologising” since it effortlessly asserts being or existence, where in fact there may only be perception, speculation or hypothesis.

^{iv} See my “A Cautionary Note or Two, Amid the Pleasures and Pains of Participation in Performance-making as Research”, presented at *Participation, Research and Learning in the Performing Arts* Symposium, 6 May 2011, Centre for Creative Collaboration, London. Organised by Royal Holloway University of London, HEA and PALATINE. Online at <http://www.sfmelrose.org.uk/pleasure-pain/>.

^v According to Richard Parry, “even Aristotle refers to *technê* or craft as itself also *epistêmê* or knowledge because it is a practice grounded in an ‘account’ — something involving theoretical understanding. Plato — whose theory of forms seems an arch example of pure theoretical knowledge — nevertheless is fascinated by the idea of a kind of *technê* that is informed by knowledge of forms. In the *Republic* this knowledge is the indispensable basis for the philosophers’ craft of ruling in the city. Picking up another theme in Plato’s dialogues, the Stoics develop the idea that virtue is a kind of *technê* or craft of life, one that is based on an understanding of the universe. The relation, then, between *epistêmê* and *technê* in ancient philosophy offers an interesting contrast with our own notions about theory (pure knowledge) and (experience-based) practice. There is an intimate positive relationship between *epistêmê* and *technê*, as well as a fundamental contrast.” Parry, Richard, “*Episteme and Technê*”, *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), consulted 10 August 2015.

^{vi} See J-P Milet ‘Experience as Technique of the Self’ in *Tekhnema 2 /Technics and Finitude/* Spring 1995.

^{vii} “Logic” in the plural because the various fields of expert practice involved differ markedly from each other, and few are fully articulable in discursive terms; but all need to be calibrated if the full production is to *work*.

^{viii} C.Hartels, T.Koch and B.Morgenthaler, “How Intuition contributes to high performance: An educational perspective”, *US-China Education Review*, Jan. 2008, Volume 5, No.1, published online at <http://files.eric.ed.gov/fulltext/ED502537.pdf>, consulted 10 August 2015.

^{ix} D. Bangert, E.Schubert, D.Fabian, “A spiral model of musical decision-making”, *Frontiers in Psychology* (2014; 5: 320), online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4001015/>, consulted 10 August 2015.

^x J.H. Moxley, K. Anders Ericsson, N. Charness and R.T. Krampe, “The role of intuition and deliberative thinking in experts’ superior tactical decision-making”, *Cognition* 124 (2012) 72–78

^{xi} Dreyfus, H., & Dreyfus, S., *Mind over machine: The power of human intuition and expertise in the era of the computer*. New York: Free Press, 1986.

^{xii} The imprecise “music” does not seem to me to be helpful.

^{xiii} J-F. Lyotard, *The Inhuman*, trans. G. Bennington & R.Bowlby, California: Stanford University Press, 1988.

^{xiv} G. Deleuze, *Le Bergsonisme*, Paris: Presses Universitaires de France, 1966. In English, *Bergsonism*, trans.H.Tomlinson & B. Habberjam, New York: Zone Books, 1988.

^{xv} J-F. Lyotard, *The Inhuman*, as above.

^{xvi} Affect and affectivity represent the full gamut of human emotion. See B.Massumi, *Parables for the Virtual: Movement, Affect, Sensation*, Durham: Duke University Press, 2002, for his development of the deleuzian approach to affect.